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Remarks

Applicants' undersigned representative wishes to thank Examiner Wang for the thorough examination of the present application and for the indication that Claims 6-9, 12, 15, 18, 19, 21-25, 37-40, 45-47, 55, 57, 59, 60, 62, 63, 65-70, 78-81, 84-86, and 93 are allowable over the art of record.

The specification and claims have been amended to correct readily apparent clerical errors therein. No new matter is introduced by the above Amendment.

The rejections based on 35 U.S.C. §§ 102-103 are overcome in part by the Declaration of Hongying Sheng (submitted herewith), which establishes that the subject matter of Claim 1 was conceived prior to the publication date of the primary reference cited against Claim 1 and diligently reduced to practice thereafter, in part by showing that the subject matter of a cited reference (Hofmeister) relied on for the rejection of Claim 35 is not available against the present claims, and in part by showing that the remaining references do not disclose or suggest all of the limitations of the independent claims. Accordingly, the present claims are considered patentable over the cited references.

The Rejection of Claims 1-5, 10, 11, 13, 27, 34, 51-54, 56, 58 and 71-75 under 35

U.S.C. § 102(e)

The rejection of Claims 1-5, 10, 11, 13, 27, 34, 51-54, 56, 58 and 71-75 under 35 U.S.C. § 102(e) as being anticipated by Gregorious et al. (U.S. Pat. No. 7,088,976; hereinafter "Gregorious") is respectfully traversed.

Gregorious is not available against the present claims under 35 U.S.C. § 102(e). Under 35 U.S.C. § 102(e), an earlier filed application is available against the claims of a later filed application if the earlier filed application was:

- (1) published under 35 U.S.C. § 122(b), by another filed in the United States before the invention by the applicant for patent or

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- (2) filed in the United States before the invention by the later applicant and subsequently patented, except that an international application filed under the treaty defined in 35 U.S.C. § 351(a) shall have the effects for the purposes of 35 U.S.C. § 102(e) only if the international application was published in the English language.

Gregorius has a filing date in the U.S. of October 18, 2004 under 35 U.S.C. § 371(c). By contrast, the present application has a filing date of August 4, 2003. As a result, Gregorius is not available under condition (1) of 35 U.S.C. § 102(e).

Under condition (2) of 35 U.S.C. § 102(e), the PCT (international) filing date of Gregorius is considered the effective filing date only if the international application was published in the English language (35 U.S.C. § 102(e); emphasis added). International patent publication WO 03/034647 (a copy of which is attached) appears to be the international application corresponding to Gregorius (note the common inventorship, PCT application no., and German priority application information). As can be easily seen, international patent publication WO 03/034647 is published in German, not English. Accordingly, Gregorius cannot be cited against the present claims under condition (2) of 35 U.S.C. § 102(e).

However, it is possible that Gregorius could be available against the present claims under 35 U.S.C. § 102(a) (i.e., where the invention may have been described in a printed publication in this or a foreign country before the invention by the present Applicant). Gregorius has a publication date of April 24, 2003, and as mentioned above, the filing date of the present application is August 4, 2003. However, as established by the Declaration of Hongying Sheng (submitted herewith), the subject matter of claim 1 was conceived prior to the publication date of Gregorius, and was diligently reduced to practice thereafter.

As evidenced by the attached Declaration, the architecture defined in the present Claim 1 was conceived prior to April 23, 2003 (see paragraph 6 of the attached Declaration of Sheng). Attached as Exhibit A to the Declaration is a copy of viewing screen printout from the Declarant's workstation of a design directory containing an integrated circuit design that includes an embodiment of the architecture defined in Claim 1 (hereinafter, the "working embodiment"). The file named "dpll.fm" contains a design (in a hardware description language) that includes the

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working embodiment. The date of the design file is prior to April 24, 2003 (see paragraph 7 of the attached Declaration of Sheng).

A specification defining the integrated circuit including the working embodiment and used internally at Marvell during product development was revised prior to April 24, 2003. An item identified in the change list of the revised specification relates to the working embodiment (see paragraph 8 of the attached Declaration of Sheng). The integrated circuit including the working embodiment was taped out at a wafer manufacturing fab prior to April 24, 2003 (see paragraph 8 of the attached Declaration of Sheng). Wafers containing the integrated circuit (including the working embodiment) were manufactured after tape out. At least part of the manufacturing process occurred after April 24, 2003 (see paragraphs 9-10 of the attached Declaration of Sheng).

The manufactured integrated circuit was diligently tested after manufacturing (paragraph 11 of the attached Declaration of Sheng). The testing of the manufactured integrated circuit was not known or believed to reveal any operational defects in the architecture recited in Claim 1. From this result, the working embodiment of the architecture of Claim 1 was concluded to have actually been reduced to practice (paragraph 11 of the attached Declaration of Sheng).

Consequently, Gregorious is not available against the present claims under 35 U.S.C. § 102(e) or 35 U.S.C. § 102(a). As a result, the rejection of Claims 1-5, 10, 11, 13, 27, 34, 51-54, 56, 58 and 71-75 as being anticipated by Gregorious is unsustainable, and should be withdrawn.

The Rejection of Claims 14, 16, 17, 20, 59, 61, 89-92 and 94-97 under 35 U.S.C.
§ 102(e)

The rejection of Claims 14, 16, 17, 20, 59, 61, 89-92 and 94-97 under 35 U.S.C. § 102(e) as being anticipated by Sanduleanu (U.S. Pat. Appl. Publ. No. 2003/0034849; hereinafter "Sanduleanu") is respectfully traversed.

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In FIG. 11, Sanduleanu discloses an embodiment of a data and clock recovery unit comprising a frequency locked loop and a phase locked loop (paragraph [0054] of Sanduleanu). The data and clock recovery unit of FIG. 11 of Sanduleanu includes matched voltage-controllable oscillators, wherein one oscillator is part of the frequency loop and the other is part of the phase locked loop (paragraph [0054] of Sanduleanu). The data and clock recovery unit of FIG. 11 of Sanduleanu further includes two charge pumps, one (CP1) in the frequency locked loop and the other (CP2) in the phase locked loop, and low-pass filters, one (LPF1) in the frequency locked loop and the other (LPF2) in the phase locked loop (paragraph [0054] of Sanduleanu).

Sanduleanu provides no indication or description that would support a conclusion that the signal DATA in FIG. 11 is a periodic signal (although it does appear to have a characteristic rate or frequency; see, e.g., paragraph [0007] of Sanduleanu). However, assuming *arguendo* that the signal DATA in FIG. 11 of Sanduleanu is a periodic signal, and further assuming *arguendo* that the output signal from the lower matched VCO in FIG. 11 of Sanduleanu is a second periodic signal, the lower matched VCO in FIG. 11 of Sanduleanu does not appear to provide an adjustment *signal* for that second periodic signal. The lower matched VCO in FIG. 11 of Sanduleanu appears to provide a single output signal. Thus, the output signal from the lower matched VCO in FIG. 11 of Sanduleanu can only be either the second periodic signal or an adjustment *signal* for that second periodic signal. However, Applicant's undersigned representative does not know how such output signal can be both.

Consequently, Sanduleanu does not anticipate the present Claims 14, 16, 17, 20, 59, 61, 89-92 and 94-97. As a result, this ground of rejection of is unsustainable, and should be withdrawn.

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The Rejection of Claims 35, 36, 76 and 77 under 35 U.S.C. § 102(c)

The rejection of Claims 35, 36, 76 and 77 under 35 U.S.C. § 102(e) as being anticipated by Hofmeister et al. (U.S. Pat. Appl. Publ. No. 2004/0071389; hereinafter "Hofmeister") is respectfully traversed.

Hofmeister does not appear to disclose a *device* having a *plurality* of receivers, each coupled to a unique one of a plurality of clock recovery loops, and a *plurality* of transmitters, each transmitter being coupled to a unique filter circuit receiving recovered clock information from a corresponding clock recovery loop. Hofmeister appears to disclose a device (e.g., 102 or 120 in FIG. 1) having at most a single receiver and a single transmitter (see, e.g., FIGS. 1-6 of Hofmeister). Thus, Hofmeister does not appear to anticipate the present Claims 35, 36, 76 and 77.

Furthermore, Hofmeister claims priority to U.S. Provisional Application No. 60/410,509, filed on September 13, 2002. However, Hofmeister has an actual filing date of July 25, 2003, after the conception date of the subject matter of the present Claim 1 (see the attached Declaration of Sheng and the discussion of Gregorious above). Hofmeister is entitled to an effective filing date of September 13, 2002 (the filing date of the corresponding provisional application) only if the provisional application(s) properly supports the subject matter relied upon to make the rejection, in compliance with 35 U.S.C. § 112, first paragraph. M.P.E.P. § 2136.03, III.

Turning to the issue of whether the provisional application properly supports the subject matter relied upon to make the rejection, 35 U.S.C. 112, first paragraph, states:

"The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same..."

Thus, if the provisional application does not describe the subject matter relied upon to make the rejection, or the manner and process of making and using it, in terms as to enable any

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person skilled in the art to make and use the same, then Hofmeister is not entitled to the filing date of the provisional application for purposes of 35 U.S.C. § 102(e).

U.S. Provisional Application No. 60/410,509 (a copy of which is submitted herewith) does not contain a figure having two transceiver modules therein, both in (wired) communication with a network, as shown in FIG. 1 of Hofmeister (which is relied on for the rejection). Instead, the provisional application focuses primarily (if not exclusively) on the circuitry and functions within a single transceiver module (i.e., one receiver, one transmitter) or the communications between a single receiver or transmitter and either the host or the network to which it is connected. Thus, there appears to be no written description in U.S. Provisional Application No. 60/410,509 of an optical data transmission system as shown in FIG. 1 of Hofmeister.

Consequently, Hofmeister is not entitled to the filing date of the corresponding provisional application for purposes of 35 U.S.C. § 102(e). As a result, Hofmeister does not appear to be available as a reference against the present claims under 35 U.S.C. § 102(e). Therefore, this ground of rejection of is unsustainable, and should be withdrawn.

The Rejection of Claims 29-33 under 35 U.S.C. § 103(a)

The rejection of Claims 29-33 under 35 U.S.C. § 103(a) as being unpatentable over Gregorious in view of Cai (U.S. Pat. No. 7,050,777; hereinafter "Cai") is respectfully traversed.

As explained above, Gregorious is not available against the present claims under 35 U.S.C. § 102(e). Cai does not appear to be capable of supporting this ground of rejection alone. Accordingly, the rejection of Claims 29-33 as being unpatentable over Gregorious in view of Cai is unsustainable, and should be withdrawn.

The Rejection of Claim 41 under 35 U.S.C. § 103(a)

The rejection of Claim 41 under 35 U.S.C. § 103(a) as being unpatentable over Hofmeister in view of Cai is respectfully traversed.

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As explained above, Hofmeister does not appear to disclose a *device* having a *plurality* of receivers, each coupled to a unique one of a plurality of clock recovery loops, and a *plurality* of transmitters, each transmitter being coupled to a unique filter circuit receiving recovered clock information from a corresponding clock recovery loop. Cai also does not appear to disclose a device having a plurality of receivers, each coupled to a unique one of a plurality of clock recovery loops, and a plurality of transmitters, each transmitter being coupled to a unique filter circuit receiving recovered clock information from a corresponding clock recovery loop. Accordingly, the rejection of Claim 41 as being unpatentable over Hofmeister in view of Cai is unsustainable, and should be withdrawn.

Furthermore, as explained above, Hofmeister is not entitled to the filing date of the corresponding provisional application for purposes of 35 U.S.C. § 102(e). As a result, Hofmeister does not appear to be available as a reference against the present claims under 35 U.S.C. § 102(e). Cai does not appear to be capable of supporting a rejection of Claim 41 alone. Therefore, this ground of rejection of is unsustainable, and should be withdrawn.

The Rejection of Claims 42-44, 48-50, 82, 83, 87 and 88 under 35 U.S.C. § 103(a)

The rejection of Claims 42-44, 48-50, 82, 83, 87 and 88 under 35 U.S.C. § 103(a) as being unpatentable over Saleh et al. (U.S. Pat. No. 7,050,777; hereinafter "Saleh") in view of Gregorious is respectfully traversed.

As recognized in the Office Action, Saleh is saliently deficient with regard to the claimed network (see, e.g., the paragraph bridging pages 16-17 of the Office Action dated February 13, 2007). As explained above, Gregorious is not available against the present claims under 35 U.S.C. § 102(e). Accordingly, the rejection of Claims 42-44, 48-50, 82, 83, 87 and 88 as being unpatentable over Saleh in view of Gregorious is unsustainable, and should be withdrawn.

The Rejection of Claims 26, 28 and 72 under 35 U.S.C. § 112, First Paragraph

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The rejection of Claims 26, 28 and 72 under 35 U.S.C. § 112, first paragraph, has been obviated by appropriate amendment.

The Objections to Claims 59, 69 and 70

The objections to Claims 59, 69 and 70 are respectfully traversed. The bases for the objections are not understood.

For example, the word “first” appears twice in line 3 of Claim 59. It is not clear which occurrence of “first” forms the basis for the objection. In either case, changing “first” to --second-- could render the claim indefinite under 35 U.S.C. § 112, second paragraph, since there would be no “first” occurrence of the following term.

Similarly, the word “third” appears twice in line 3 of Claim 69. However, it appears that the objection probably applies to the second term. To that extent, Claim 69 has been amended. However, deleting any other occurrence of the word “third” could render the claim indefinite under 35 U.S.C. § 112, second paragraph, since the term “third means for filtering” in line 1 clearly refers to the third means for filtering recited in Claim 68, and in the absence of the word “third” in line 1 of Claim 69, one would not know which means for filtering in Claims 59, 64 and 68 is modified by Claim 69. Applicant’s undersigned representative also wishes to avoid potential confusion between the “means for filtering,” “means for multiplying” and coefficients in Claim 69 and the same terms used in Claims 59-68 that could refer to the same or different components.

Finally, like Claims 59 and 69, changing “first” to --second-- in line 1 of Claim 70 could render the claim indefinite under 35 U.S.C. § 112, second paragraph, since there would be no “first” occurrence of the following term (namely, a “means for combining”).

Accordingly, withdrawal of the objections to Claims 59, 69 and 70 is respectfully requested.

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Conclusions

In view of the above amendments and remarks, Applicant's undersigned representative respectfully requests entry of the above Amendment. Early notice to that effect is earnestly requested.

If it is deemed helpful or beneficial to the efficient prosecution of the present application, the Examiner is invited to contact Applicant's undersigned representative by telephone.

Respectfully submitted,



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